

Guclu et al.

S/N: 10/604,481

IN THE DRAWINGS

The attached drawing sheet replaces sheet 1 containing Fig. 1. Drawings changes have been made to Figure 1 to overcome the drawing objection.

In Fig. 1, the imaging subject shown in the figure has been replaced with a phantom 74 inside the bore as described in the specification. Support can be found in at least paragraph 25 of the Specification.

No new matter has been added.

Drawing Attachment: One Replacement Sheet of drawings

Guclu et al.

S/N: 10/604,481

REMARKS

Claims 1-25 are pending in the present application. Applicant appreciates rejoinder of all pending claims. In the Office Action mailed December 16, 2004, the Examiner objected to the title of the invention and Figure 1. The Examiner also rejected claims 1-3, 5, 7-10, 12-20, and 22-25 under 35 U.S.C. §102(b) as being anticipated by Vaughan et al. (USP 4,888,555). The Examiner further objected to claims 4, 6, 11, and 21 as being dependent upon a rejected base claim, but indicated that claims 4, 6, 11, and 21 would be allowable if rewritten in independent form. Such indication and thorough examination are appreciated.

Applicant has amended claim 7 to further clarify and define that which is called for therein. No new matter has been added.

In Applicant's previous communication on October 4, 2004, an amendment to claim 16 was presented. However, markings to indicate changes thereto were not presented. Accordingly, Applicant has marked claim 16 herein to indicate the intended amendment.

The Examiner indicated that a change in the title is required under MPEP 606.01. Applicant respectfully disagrees. The application is directed to an apparatus to simulate MR properties of human brain for MR applications evaluation as adequately described by the title. Since the title is descriptive of the invention as set forth in the application, Applicant believes that no correction is needed.

The Examiner stated that "Figure 1 should be designated by a legend such as -- Prior Art -- because only that which is shown is illustrated." Office Action, p. 2. Applicant has amended Fig. 1 to show a phantom 74 shown inside the bore as described in the specification. Therefore, since Fig. 1 incorporates the present invention as shown therein and as described in the specification, a Prior Art designation is unwarranted.

The Examiner rejected claim 1 under 35 U.S.C. §102(b) as being anticipated by Vaughan et al. The Examiner indicated that Vaughan et al. discloses "a structure constructed to support a plurality of sections (sections #34). . . ." Office Action, p. 3.

Vaughan et al. teaches a plurality of flood-field tubes 34 "cantilevered into the interior of the phantom enclosure." Col. 4, lns. 64-66. Flood-field tubes 34 are attached to front end-plate 20 and are surrounded by NMR active and RF conductive material when placed on the phantom cylinder 12. See col. 5, lns. 8-12. Figure 1 of Vaughan et al. shows a plurality of chambers defined by the cylinder body 12 and system grid plates 24, 26, and 28 into which the flood-field tubes 34 are inserted.

Guclu et al.

S/N: 10/604,481

Applicant has amended claim 1 to further clarify and define that which is called for therein. Claim 1 calls for, in part, a structure constructed to support a plurality of sections, wherein the structure includes a grid defining a plurality of multi-layer cells, and wherein each section is supported by at least two cell layers. Vaughan et al. fails to teach that called for in claim 1. That is, Vaughan et al. does not teach at least two cell layers supporting each section as called for in claim 1. As stated above, Vaughan et al. teaches extending cantilevered sections into chambers defined by the cylinder body 12 and system grid plates 24, 26, and 28. However, the sections are supported by front end-plate 20, not by the chamber. Furthermore, inserting the sections into the chambers without being supported by front end-plate 20 does not anticipate that called for in claim 1 since the sections would not be supported by at least two cell layers.

Therefore, for at least the reasons above, claim 1 and the claims that depend therefrom are believed patentable over the prior art of record.

The Examiner rejected claim 8 under 35 U.S.C. §102(b) as being anticipated by Vaughan et al. The Examiner stated that "Vaughan discloses the first section further comprises a plurality of tubes wherein each tube (sections #34) contains a common composition of paramagnetic gel, agarose gel, deuterium oxide, and water (Column 4, lines 1-14)." Office Action, para. 6. Applicant respectfully disagrees.

Claim 8 calls for, in part, depositing a first combination of paramagnetic powder, agarose powder, deuterium oxide, and water in a first set of interstitial cavities and depositing a second combination of paramagnetic powder, agarose powder, deuterium oxide, and water in a second set of interstitial cavities. Vaughan et al. fails to teach or suggest a combination or material containing deuterium oxide. Vaughan et al. teaches that an RF conductive material "may comprise a solution of agarose gel or some other polysaccharide gel solution." Col. 3, ln. 67 - Col. 4, ln 2. Vaughan et al. also teaches that "[t]he gel solution may be combined with salts that dissociate in the gel" Col. 4, lns. 2-5. Further, "[t]he gel solution may also include a conductive salt" Col. 4, lns. 5-14. Vaughan et al., however, does not teach including deuterium oxide as called for in claim 8. In fact, there is no mention of deuterium oxide in Vaughan et al. Therefore, since Vaughan et al. fails to teach that called for in claim 8, Vaughan et al. does not anticipate claim 8.

For at least the reasons above, claim 8 and the claims that depend therefrom are believed patentable over the prior art of record.

The Examiner rejected claim 16 under 35 U.S.C. §102(b) as being anticipated by Vaughan et al. and, with regard thereto, stated "see rejection of claims 1 and 2 above." Office

Guclu et al.

S/N: 10/604,481

Action, para. 11. However, neither rejection of claim 1 nor claim 2 indicates anticipation of applying a T1-weighted sequence to acquire T1-weighted MR data of the phantom and determining an optimum flip angle for T1-weighted imaging of a human brain having characteristics similar to that of the phantom when subjected to B0 as called for in claim 16. In fact, Vaughan et al. is silent on these steps. That is, Vaughan et al. does not teach or suggest applying a T1-weighted sequence to acquire T1-weighted MR data of the phantom or determining an optimum flip angle for T1-weighted imaging of a human brain having characteristics similar to that of the phantom when subjected to B0, and the Examiner has not indicated where Vaughan et al. teaches such steps. Therefore, Vaughan et al. fails to anticipate claim 16.

For at least the reasons set forth above, claim 16 and the claims that depend therefrom are believed patentable over the prior art of record.

The Examiner rejected claim 23 under 35 U.S.C. §102(b) as being anticipated by Vaughan et al. and, with regard thereto, stated "see rejection of claims 1, 2 and 14 above." Office Action, para. 13. Claim 23 calls for, in part, a first mixture comprising paramagnetic material, agarose material, and deuterium oxide and a second mixture comprising paramagnetic material, agarose material, and deuterium oxide. As stated above with respect to the rejection of claim 8, Vaughan et al. does not teach a material including deuterium oxide. Although Vaughan et al. teaches that an RF conductive material may comprise a solution of agarose gel or some other polysaccharide gel solution combined with salts that dissociate in the gel and combined with a conductive salt, Vaughan et al. fails to teach or suggest a combination or material containing deuterium oxide. See Col. 3, ln. 67 - Col. 4, ln 14. As such, Vaughan et al. fails to anticipate claim 23.

For at least the reasons above, claim 23 and the claims that depend therefrom are believed patentable over the prior art of record.

Applicant has added new claims 26 and 27 incorporating the subject matter of allowable claims 4 and 6, respectively, including the base claim and intervening claim limitations.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-27.

Guclu et al.

S/N: 10/604,481

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



Kent L. Baker
Registration No. 52,584
Phone: 262-376-5170
klb@zpspatents.com

Dated: February 16, 2005
Attorney Docket No.: GEMS8081.150-1

P.O. ADDRESS:
Ziolkowski Patent Solutions Group, SC
14135 North Cedarburg Road
Mequon, WI 53097-1416
262-376-5170